

# PHYSICS & ASTRONOMY SEMINAR

## “Colloidal 1D and 2D Lead Chalcogenide”

*Presented by:*  
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**Abstract:** Colloidal one-dimensional (1D) and two-dimensional (2D) lead chalcogenide nanocrystals are emerging nanomaterials with novel properties which may find applications in optoelectronic devices (e.g. solar cells and light-emitting diodes), thermoelectric devices, lasers, and photocatalytic devices. In my talk, I will show my research on 1D PbSe nanorods and 2D PbS nanosheets. I will start from the syntheses of these low-dimensional nanocrystals with an emphasis on the growth mechanism, then demonstrate their novel optical properties. Finally, I will demonstrate some applications based on them. If time permits, I can briefly show some interesting research results of carbon dots and Ti-doped Ga<sub>2</sub>O<sub>3</sub>.

**Thursday, February 25, 2021**  
**4:00 pm**  
**PSLB 112**